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(54) **Horizontal axis wind turbine**

(57) This horizontal axis wind turbine comprises a plurality of yaw motors (3 a - 3d) that are provided on one of either a nacelle (5) or a tower (6), and a gear (2) that is provided on the other of either the nacelle (5) or the tower (6) and that engages with the drive gears (4a - 4d) of the plurality of yaw motors (3a - 3d), such that when the plurality of yaw motors stop the rotation of the nacelle (5), some of the yaw motors are stopped and held by yaw motor brakes, then after a delay, the other yaw motors are stopped and held by yaw motor brakes. When the other yaw motors are stopped, the drive gears (4m) of the some yaw motors and the drive gears (4n) of the other yaw motors hold the gear (2) by pressing against the gear (2) in opposite directions of rotation.

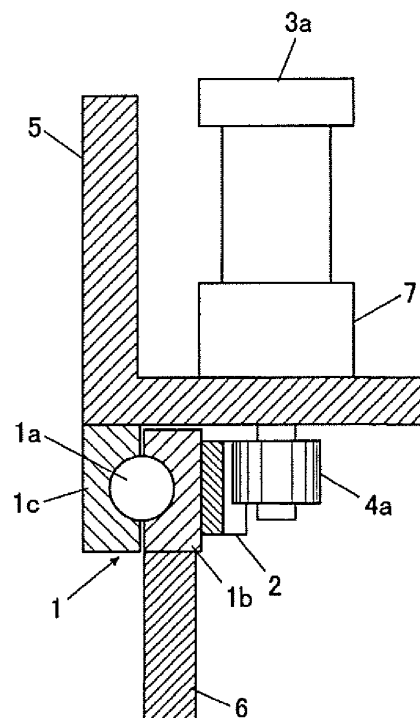


FIG.2



EUROPEAN SEARCH REPORT

Application Number
EP 11 16 8377

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	EP 2 101 058 A2 (NORDEX ENERGY GMBH [DE]) 16 September 2009 (2009-09-16) * abstract * * paragraph [0010] - paragraph [0013] * * paragraph [0015] * * paragraph [0018] * * paragraph [0021] * * paragraph [0027] - paragraph [0033] * * figures 1-3 * -----	1-4	INV. F03D7/02
A	DE 10 2007 049368 A1 (SETEC GMBH [DE]) 21 May 2008 (2008-05-21) * abstract * * paragraph [0037] - paragraph [0040] * * paragraph [0057] * * paragraph [0061] - paragraph [0062] * * paragraph [0093] * * paragraph [0098] - paragraph [0099] * * figures 6, 6.1-6.3, 7 * -----	1-4	
A	EP 0 428 783 A1 (SIEMENS AG [DE]) 29 May 1991 (1991-05-29) * column 2, line 26 - line 35 * * column 3, line 18 - line 35 * * figures 1,2 * -----	1-4	TECHNICAL FIELDS SEARCHED (IPC) F03D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 4 April 2014	Examiner Westermayer, Philipp
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 11 16 8377

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The members are as contained in the European Patent Office EDP file on
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04-04-2014

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2101058 A2	16-09-2009	DE 102008013864 A1	17-09-2009
		EP 2101058 A2	16-09-2009
		US 2009232652 A1	17-09-2009

DE 102007049368 A1	21-05-2008	NONE	

EP 0428783 A1	29-05-1991	AT 100649 T	15-02-1994
		DE 58906787 D1	03-03-1994
		EP 0428783 A1	29-05-1991
		ES 2048267 T3	16-03-1994
		JP H03183391 A	09-08-1991

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82